NISTTech

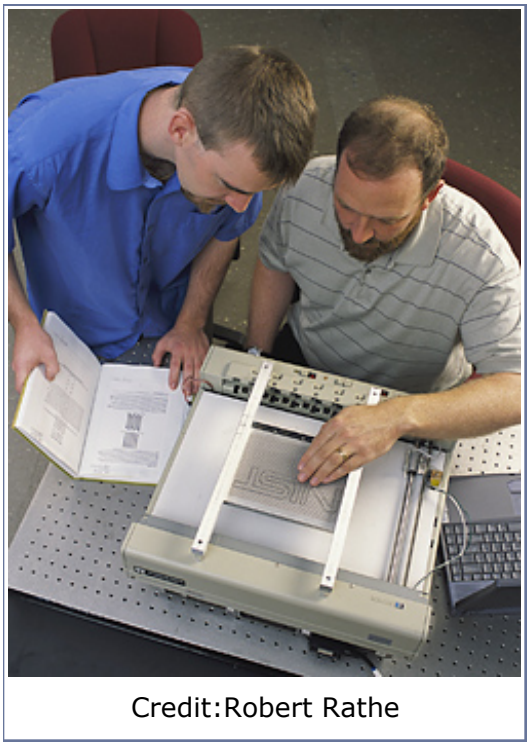
Refreshable Scanning Tactile Graphic Display for Localized Sensory Stimulation

Affordable graphic reading systems bring electronic images to life for the blind and visually impaired

Description

This version of the Refreshable Scanning Tactile Graphic Display is specifically designed for one-finger use. Therefore this device is ideal for mounting in a glove or on a computer mouse for use by the visually impaired.

Images



Credit:Robert Rathe

Applications

- **Human factors**
  Conveys scanned illustrations, map outlines or other graphical images to the fingertips.
- **Military, aviation, training and entertainment industries**
  Fingertip tactile graphics practical for virtual reality systems or give a detailed sense of touch to robotic control (teleoperation) and space suit gloves.

- **Accessibility**
  Translates images displayed on internet web pages or in electronic books.

Advantages

- **Reusable**
  Refreshable tactile graphic display technology for a succession of images.

Abstract

Pressure-based refreshable scanning tactile graphic display apparatus and methods are disclosed for localized sensory stimulation. The apparatus include a display array having stimulus points embedded in a matrix, an energy source applied at the stimulus points through a modulator, a control unit, and a position sensing and feedback unit or units (such as a mouse-type device or data glove, for example). The energy source is preferably stored and pressurized fluid with application to selected stimulus points (pins, for example) preferably directed at a microvalve array under the control of a computer-based control unit.

Inventors

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Citations

1. NIST Docket #99-021, U.S. Patent # 6,776,619, Refreshable Braille Reader: Apparatus & Method Utilizing Bi-Directional Relative Movement
2. NIST Docket #99-021CIP, U.S. Patent # 6,692,255, Refreshable Braille Reader: Apparatus & Method Utilizing Bi-Directional Relative Movement (Continuation-in-part Patent)
3. NIST Docket #02-003, U.S. Patent # 7,009,595, Extended Refreshable Tactile Graphic Array for Scanned Tactile Display

Related Items

- Article: NIST Licenses Systems to Help the Blind "See" Images

References

- U.S. Patent # 7,352,356
- Docket: 02-002US

Status of Availability

This invention is available for licensing.

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